

CHAPTER 3 – STREET DESIGN STANDARDS

3.1 GENERAL INFORMATION

1. The street system and classification shall be based on the City of Surprise Long Range Master Street Plan.
2. All street intersections shall be constructed with concrete vertical curb returns and sidewalk ramps as specified within this chapter. For back of curb radii between 30 feet and 35 feet, use City of Surprise Standard Detail 3-11. For curb radii less than 30 feet, use MAG Detail 235-2. The radii of sidewalk ramps to the back of curb at intersection locations are detailed in Table 3-1.

Table 3-1 Radius of Sidewalk Ramps to Back of Curb at Intersection Locations

<u>Street Classification</u>	<u>Parkways</u>	<u>Major Arterial</u>	<u>Minor Arterial</u>	<u>Residential Collector</u>	<u>Local</u>
Parkways	35'	35'	35'	30'	N/A
Major Arterial	35'	35'	35'	30'	20'
Minor Arterial	35'	35'	35'	30'	20'
Residential Collector	30'	30'	30'	25'	20'
Local	N/A	20'	20'	20'	20'

3. Sidewalk locations and widths shall be in accordance with City of Surprise Standard Details 3-01 through 3-07. A geotechnical report must be submitted with the street design documents to justify the use of the minimum design criteria according to the soil conditions.
4. Pavement shall be designed as per Table 3-2 and the Maricopa County Department of Transportation (MCDOT) Roadway Design Manual.
5. All trench backfill and pavement replacement shall be in accordance with MAG Details 200-1 and 200-2 and the Pavement Cut Policy contained within the current Surprise Municipal Code.

3.2 VALLEY GUTTERS

1. Concrete valley gutters shall be constructed per MAG Detail 240.
2. Valley gutters are not allowed to cross parkways, arterials and collectors.
3. Valley gutters crossing local street intersections with collector streets shall be a minimum of six feet wide. Valley gutters at local to local street intersections shall also be a minimum of six feet wide. Mid-block valley gutters on local streets shall be a minimum of eight feet wide. Mid-block valley gutters are not permitted on any other street classification.
4. Asphalt valley gutters are not allowed on public streets.

3.3 TECHNICAL STREET DESIGN REQUIREMENTS BY STREET CLASSIFICATION

The technical street design requirements for all street classifications are shown in Table 3-2 on the following page. For rural minor roads, refer to MCDOT Roadway Design Manual Figure 5.4.

TABLE 3-2

TECHNICAL DESIGN REQUIREMENTS BY STREET CLASSIFICATION

ITEM		PARKWAY	MAJOR ARTERIAL	MINOR ARTERIAL	COLLECTOR	LOCAL	LOCAL CUL-DE-SAC
DESIGN SPEED (VD)		55 MPH	55 MPH	55 MPH	50 MPH	30 MPH	N/A
DESIGN VEHICLE		WB-67	WB-50	WB-50	WB-50	WB-50	WB-50
SUPERELEVATIONS (E _{MAX})		4%	4%	4%	4%	N/A	N/A
MINIMUM RIGHT OF WAY (FULL LENGTH)		200'	136'	110'	105' (HIGH VOLUME) 80' (RESIDENTIAL) 60' (COMMERCIAL)	55' (ON STREET PARKING) 40' (NO PARKING)	115'
MINIMUM STREET WIDTH (BACK OF CURB TO BACK OF CURB)		140'	101' (W/O BIKE LANE) 111' (W/ BIKE LANE)	79'	77' (HIGH VOLUME) 53' (RESIDENTIAL) 38' (COMMERCIAL)	32' (ON STREET PARKING) 28' (NO PARKING)	94'
CURBING	(MAG STD DET 220)	VERTICAL CURB AND GUTTER				SINGLE FAMILY RESIDENTIAL - ROLL CURB AND GUTTER ALL OTHER INCLUDING MULTIFAMILY - VERTICAL CURB AND GUTTER	
SIDEWALK WIDTH	(MAG STD DET 230)	12'	6'	6'	6' (HIGH VOL & RES) 5' (COMMERCIAL)	5' (ON STREET PARKING) N/A (NO PARKING)	5'
PAVEMENT STRUCTURE (B)		PER GEOTECHNICAL RECOMMENDATIONS. 5" AC OVER 9" ABC MINIMUM			PER GEOTECHNICAL RECOMMENDATIONS. 3" AC OVER 8" ABC MINIMUM		
LONGITUDINAL SLOPE		0.3% MINIMUM 8% MAXIMUM			0.3% MINIMUM 12% MAXIMUM		0.3% MIN 12% MAX
CROSS SLOPE		2% MINIMUM - 3% MAXIMUM					
VERTICAL CURVES (a)	REQUIRED WHEN:		GRADE CHANGE EXCEEDS 1.0%		GRADE CHANGE EXCEEDS 2.0%		
	CREST CURVE MINIMUM		LENGTH = 160 x A	LENGTH = 85 x A	LENGTH = 55 x A	LENGTH = 28 x A	LENGTH = 28 x A
	SAG CURVE MINIMUM		LENGTH = 160 x A	LENGTH = 75 x A	LENGTH = 55 x A	LENGTH = 35 x A	LENGTH = 35 x A
HORIZONTAL CURVES	REQUIRED WHEN:		TANGENT CL DEFLECT MORE THAN 7 DEGREES		TANGENT CL DEFLECT MORE THAN 10 DEGREES		
	MINIMUM RADIUS		500'		100'		
	MINIMUM TANGENT CL BETWEEN REVERSE CURVES		150'		100'		
TAPERS (B)	LENGTH		Vd x W			(Vd ² x W) / 60	

NOTES: A = ALGEBRAIC DIFFERENCE OF THE TWO SLOPES. | W = DISTANCE FROM LIP OF GUTTER TO EDGE OF EXISTING PAVEMENT.

^(a) LENGTH OF VERTICAL CURVE SHALL BE ADJUSTED TO AN EVEN ONE-HALF STATION (I.E. 160 x A = 532'; USE 550'). | ^(B) PAVEMENT SECTION FOR INTERIM ROADWAY TAPERS SHALL BE 3" AC OVER 8" ABC MIN.

APPENDIX 3-1

DRIVEWAY PLAN FOR RESIDENTIAL LOT



CITY OF SURPRISE (APPENDIX 3-1)
Driveway Plan for Residential Lot
(Attach (2) copies to civil permit application)

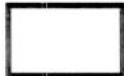
Property Information:

Owner's Name: _____

Site Address: _____ Zip Code: _____

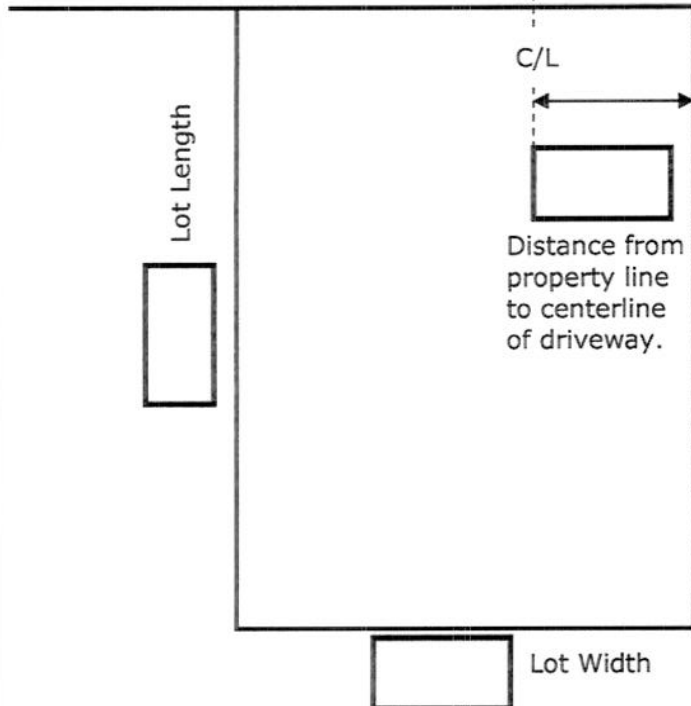
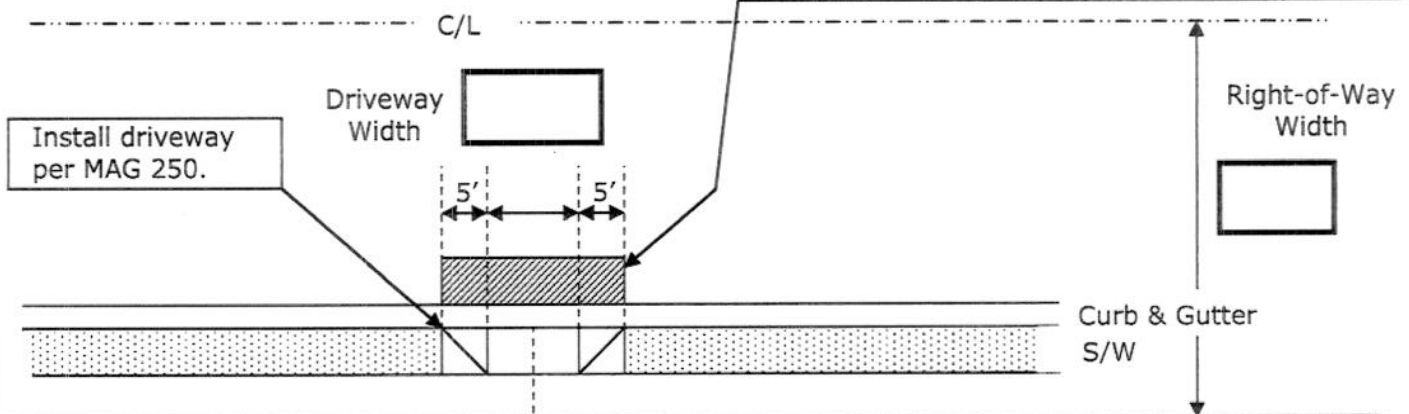
Phone Number: _____ APN#: _____

Site/Construction Plan:



Boxes to be completed by applicant.

Sawcut and remove existing pavement minimum 4' wide. AC replacement per City of Surprise approved mix design list. Consult inspector for appropriate mix designs. AC replacement to match existing depth of asphalt.



**THIS SECTION TO BE COMPLETED
BY CITY STAFF**

Permit Quantities:

Concrete Base Fee	_____ EA
Driveway Cut Residential	_____ EA
Driveway Residential	_____ EA
Paving Base Fee	_____ EA
Pavement	_____ SY

Approval:

DATE